

# Customer Success Story



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## SITUATION:

Kaba Access Control, a North Carolina-based manufacturing facility, has been home to some diverse operations, including a cotton mill, foundry, and furniture hardware manufacturer. The company has utilized its prior assets to build a business that includes die-casting, plating, sanding, stamping, assembly, and shipping operations, as well as in-house research, engineering, and customer support services. The facility includes 150,000 square feet of manufacturing and office space and employs over 250 personnel.

Coinciding with its changing businesses, the building's original 1905 brick structure has undergone a series of renovations and additions, morphing the once basic space into a complex web of access points. The company had managed their access points with an online, wired system, but retired the system when it could not provide expanded coverage at a reasonable cost. With input from the safety committee, the company embarked on choosing and installing a new access control system that would provide a higher level of security and accommodate its numerous users and critical access points.



## Historic Manufacturing Site Vaults into 21<sup>st</sup> Century by Implementing a Wireless Access Control System

### SOLUTION:

"We've grown to a state where controlling the ingress and egress at numerous access points has become a priority," says David Stewart, facility manager. "In addition to our main office space and manufacturing floor, we have controlled areas such as research and development, a records room, and warehouse/storage that need constant control and monitoring.

Since we are in the business of providing security solutions, we looked internally throughout Kaba for a new access control system. We decided to replace the legacy wired system with Kaba Access Control's new Wireless System and Mifare® card credentials. One reason for choosing the Wireless System over other systems was the ability to maintain a 'one card' system. We decided early on that we wanted to use smart card technology. Mifare cards work with our Autotime® Time and Attendance system, and smart card technology affords us

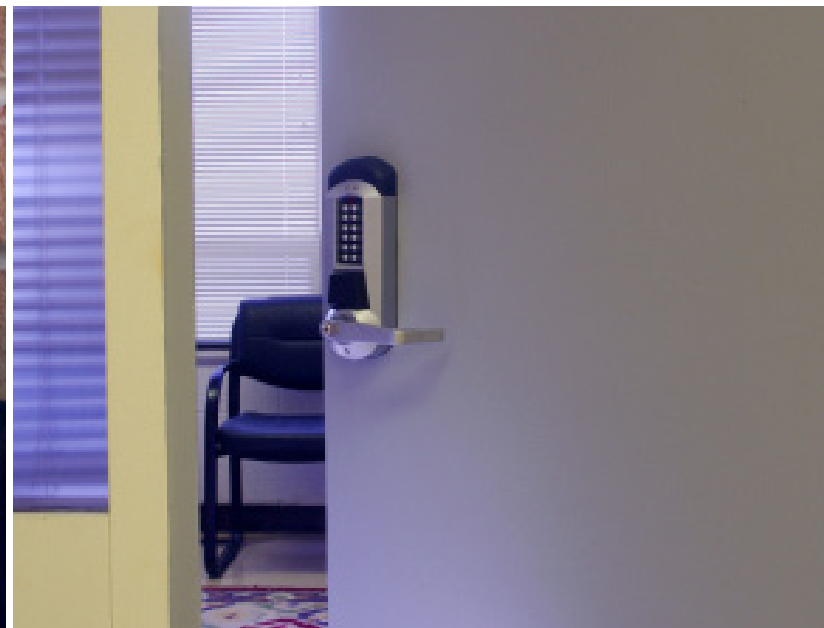
future capabilities such as the integration of a biometric application or employee benefit. The Wire-less System allows us to have the compatibility we need today and the flexibility we'll need for tomorrow."

Kaba Access Control manufactures both pushbutton and electronic locks. One of its newest electronic products is the E-Plex® Enterprise System with Wireless Option. Designed as a modular and scalable solution, the Kaba Wireless System employs E-Plex Locks and Controllers and offers a variety of locking device choices. It incorporates Enterprise Software for central management of users and locks, and E-Plex Gateways and Routers with ZigBee Technology for fast, two-way communication.

The hub of the Kaba Wireless System is ZigBee Technology. Based on IEEE Standard 802.15.4, ZigBee uses low-power digital radio frequencies (RF) to provide



Stand-alone access controller located at front entrance.



Outside Antenna Kit and E-Plex lock mounted on office door.

“The Wireless System allows us to have the compatibility we need today and the flexibility we’ll need for tomorrow.”

fast data transfer and mesh redundancy via a Gateway or Router from an E-Plex Lock to the facility’s central server. ZigBee is the only IEEE standard for battery-operated devices and offers many advantages over Wi-Fi technology, including maximum battery life and minimum latency.

“We conducted a site survey to measure radio frequency signal strength,” adds Stewart. “This determined the range, location, and quantity of Gateways and Routers. Based on our results, we identified 100 access points for our wireless system. Since some of the access points already had E-Plex Locks on the doors, we simply added Wireless Antenna Kits to those locks. This capability was another catalyst for going wireless with the Kaba system. It meant that we could keep our original lock investment, and in the future, if we modify our access points, we can move the lock and kit from one location to another.”

The Kaba building has a variety of doors, including glass, metal, and wood with cylindrical, mortise, and exit trim locking devices. The system needed to accommodate all of these requirements as well as some interior structure challenges, including its myriad of spaces and variety of construction materials and techniques.

“We needed to understand the boundaries of ZigBee and balance those parameters with our building’s complexities to develop an effective access control system,” says Stewart. “We

strategically placed Gateways and Routers to ensure that we got optimum communication. With our Wireless System, we now control and monitor access at our critical access points as well as our perimeter doors, main break room, stairwells, storage room, supervisors’ offices, conference rooms, training rooms, and hallways to manufacturing.”

The Wireless System uses Enterprise Software with a Microsoft SQL database to manage user and access point information from a central location. Kaba chose a Client/Server configuration, so all PCs and laptops connect via TCP/IP. The software allows users to set up user profiles, including photos, access schedules, and credential assignments by door. Individual departments can also establish unique schedules, such as putting a door into passage mode at the beginning of the day. With the first-person authorized feature, individuals can access a door, but only those with first-person rights can engage the passage mode function. In addition to passage mode, authorized users can initiate an emergency global lockdown or lockdown by door groups.

Enterprise Software features a Dashboard to view a snapshot of key indicators, such as door status, door battery status, door state, and RF signal strength, as well as gain total visibility of the system. Located on the Dashboard, the Events Screen displays real-time lock and user events so users see what occurred at each lock. This feature can be a valuable tool for con-



Wireless Antenna Kit and E-Plex Lock, mounted to the pump house door, and a Router, housed in a NEMA 4 enclosure on the main building, allow real-time functionality between the remote location and computer server.

firming information, for example, if an employee indicates that he/she were in the building at 8:00 a.m., the Events Screen can validate that data. Alternatively, if users need to establish who has been in a particular area or office, administrators can pull an audit trail.

“We are also in the process of creating service cards for vendors who are in every week,” says Vickie Bentley, human resources manager. “A vendor representative would simply present their ID at the security desk, ‘check out’ their vendor card, conduct their business, and return their card at the end of their visit. This enables vendors the flexibility to get their job done without the constant disruption of being ‘let in’ the building. In the future, contractors who need after-hours access into the facility will receive a contractor card with expiry prior to starting a job. Vendors can take the card off the premises, but the card must be returned at the end of the job.”

We are also planning to install a Stand-alone Access Controller (SAC) on the parking gate. Employees would simply present their credential to the reader, and once validated by the computer system, the parking gate would allow entrance into the facility’s lot.”

The Wireless System also allows users to manage both wireless and stand-alone locks. Some access points such as a janitor’s closet may need security, but due to low usage and limited users, it does not need wireless functionality. However, a stand-alone lock can be added to the wireless network later by installing a Wireless Antenna Kit and joining the lock to the network.

“One major benefit of the Kaba Wireless System over a wired system is that it eliminates the installation hassle,” adds Stewart.

One of Kaba’s access points is a pump house located 300’ from the main entrance in a remote building. It houses expensive machinery that needs to be secured and serviced on a regular basis. With a wired system, providing access control to the pump house would have been a very expensive solution, requiring digging up the parking lot, installing conduit, and running wire. Installers mounted a Wireless Antenna Kit and lock to the pump house door and a Router, housed in a NEMA 4 enclosure, on the exterior of the main building. This combination allows real-time functionality between the remote location and computer server.

**IMPACT:**

“We’ve been very impressed with the Wireless System—it’s solid,” adds Stewart. “Our building has so many access points that need control and monitoring. This system has proven that it can work in a building with numerous obstacles, including convoluted spaces, a mix of doors, locking devices, and construction materials. If the Kaba Wireless System can work here, then it can work anywhere.”

In addition, it has raised employees’ awareness of the company’s commitment to security both assets and personnel. Everyone understands that we installed this system as a preventative measure and appreciates that we implemented a system with leading-edge technology. It has given our historic site the modern twist it needed.”